

## Appendix D URBEMIS Modeling Results (Revised)



Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: P:\Projects - All Employees\+10000\7145 BRSP\Staff Folders\Chris M\Final EIR\Operational AQ\BRSP - Operational.urb924

Project Name: BRSP - Operational

Project Location: Placer County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	8.57	1.42	1.75	0.00	0.00	0.00	1,797.57

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	10.11	12.52	108.16	0.16	27.42	5.24	15,503.04

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	18.68	13.94	109.91	0.16	27.42	5.24	17,300.61

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.11	1.41	0.67	0.00	0.00	0.00	1,793.47
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	2.30
Landscape	0.17	0.01	1.08	0.00	0.00	0.00	1.80
Consumer Products	6.96						
Architectural Coatings	1.33						
TOTALS (tons/year, unmitigated)	8.57	1.42	1.75	0.00	0.00	0.00	1,797.57

Area Source Changes to Defaults

- Percentage of residences with wood stoves changed from 35% to 0%
- Percentage of residences with wood fireplaces changed from 10% to 0%
- Percentage of residences with natural gas fireplaces changed from 55% to 74%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	1.94	2.35	20.77	0.03	5.17	0.99	2,939.96
Condo/townhouse general	3.29	3.74	32.98	0.05	8.22	1.57	4,669.78
Regnl shop. center	4.88	6.43	54.41	0.08	14.03	2.68	7,893.30
TOTALS (tons/year, unmitigated)	10.11	12.52	108.16	0.16	27.42	5.24	15,503.04

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2017 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

<u>Summary of Land Uses</u>						
Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	66.67	9.64	dwelling units	200.00	1,928.00	16,483.82
Condo/townhouse general	36.25	5.28	dwelling units	580.00	3,062.40	26,182.60
Regnl shop. center		67.22	1000 sq ft	90.00	6,049.80	44,726.17
					11,040.20	87,392.59

<u>Vehicle Fleet Mix</u>				
Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	39.9	0.0	99.7	0.3
Light Truck < 3750 lbs	14.0	0.7	94.3	5.0
Light Truck 3751-5750 lbs	22.4	0.0	100.0	0.0
Med Truck 5751-8500 lbs	11.1	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.7	0.0	77.8	22.2
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	44.4	55.6
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	1.1	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	5.5	43.6	56.4	0.0

<u>Vehicle Fleet Mix</u>				
Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.3	0.0	84.6	15.4

<u>Travel Conditions</u>						
	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: P:\Projects - All Employees\+10000\7145 BRSP\Staff Folders\Chris M\Final EIR\Operational AQ\BRSP - Operational.urb924

Project Name: BRSP - Operational

Project Location: Placer County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	47.88	7.89	15.68	0.00	0.04	0.04	9,847.16

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	53.51	59.72	573.81	0.86	150.26	28.70	88,796.04

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	101.39	67.61	589.49	0.86	150.30	28.74	98,643.20

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.59	7.75	3.66	0.00	0.01	0.01	9,827.21
Hearth - No Summer Emissions							
Landscape	1.86	0.14	12.02	0.00	0.03	0.03	19.95
Consumer Products	38.16						
Architectural Coatings	7.27						
TOTALS (lbs/day, unmitigated)	47.88	7.89	15.68	0.00	0.04	0.04	9,847.16

Area Source Changes to Defaults

- Percentage of residences with wood stoves changed from 35% to 0%
- Percentage of residences with wood fireplaces changed from 10% to 0%
- Percentage of residences with natural gas fireplaces changed from 55% to 74%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Single family housing	10.40	11.22	110.73	0.16	28.35	5.42	16,835.15
Condo/townhouse general	18.21	17.82	175.89	0.26	45.03	8.61	26,740.64
Regnl shop. center	24.90	30.68	287.19	0.44	76.88	14.67	45,220.25
TOTALS (lbs/day, unmitigated)	53.51	59.72	573.81	0.86	150.26	28.70	88,796.04

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2017 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses						
Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	66.67	9.64	dwelling units	200.00	1,928.00	16,483.82
Condo/townhouse general	36.25	5.28	dwelling units	580.00	3,062.40	26,182.60
Regnl shop. center		67.22	1000 sq ft	90.00	6,049.80	44,726.17
					11,040.20	87,392.59

Vehicle Fleet Mix				
Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	39.9	0.0	99.7	0.3
Light Truck < 3750 lbs	14.0	0.7	94.3	5.0
Light Truck 3751-5750 lbs	22.4	0.0	100.0	0.0
Med Truck 5751-8500 lbs	11.1	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.7	0.0	77.8	22.2
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	44.4	55.6
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	1.1	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	5.5	43.6	56.4	0.0

<u>Vehicle Fleet Mix</u>				
Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.3	0.0	84.6	15.4

<u>Travel Conditions</u>						
	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: P:\Projects - All Employees\+10000\7145 BRSP\Staff Folders\Chris M\Final EIR\Operational AQ\BRSP - Operational.urb924

Project Name: BRSP - Operational

Project Location: Placer County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	46.23	11.35	5.19	0.02	0.30	0.30	14,423.92

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	59.24	86.33	630.40	0.77	150.26	28.70	77,252.46

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	105.47	97.68	635.59	0.79	150.56	29.00	91,676.38

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.59	7.75	3.66	0.00	0.01	0.01	9,827.21
Hearth	0.21	3.60	1.53	0.02	0.29	0.29	4,596.71
Landscaping - No Winter Emissions							
Consumer Products	38.16						
Architectural Coatings	7.27						
TOTALS (lbs/day, unmitigated)	46.23	11.35	5.19	0.02	0.30	0.30	14,423.92

Area Source Changes to Defaults

- Percentage of residences with wood stoves changed from 35% to 0%
- Percentage of residences with wood fireplaces changed from 10% to 0%
- Percentage of residences with natural gas fireplaces changed from 55% to 74%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Single family housing	11.16	16.24	119.89	0.15	28.35	5.42	14,657.82
Condo/townhouse general	17.73	25.80	190.44	0.23	45.03	8.61	23,282.21
Regnl shop. center	30.35	44.29	320.07	0.39	76.88	14.67	39,312.43
TOTALS (lbs/day, unmitigated)	59.24	86.33	630.40	0.77	150.26	28.70	77,252.46

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2017 Temperature (F): 40 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses						
Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	66.67	9.64	dwelling units	200.00	1,928.00	16,483.82
Condo/townhouse general	36.25	5.28	dwelling units	580.00	3,062.40	26,182.60
Regnl shop. center		67.22	1000 sq ft	90.00	6,049.80	44,726.17
					11,040.20	87,392.59

Vehicle Fleet Mix				
Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	39.9	0.0	99.7	0.3
Light Truck < 3750 lbs	14.0	0.7	94.3	5.0
Light Truck 3751-5750 lbs	22.4	0.0	100.0	0.0
Med Truck 5751-8500 lbs	11.1	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.7	0.0	77.8	22.2
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	44.4	55.6
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	1.1	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	5.5	43.6	56.4	0.0

<u>Vehicle Fleet Mix</u>				
Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.3	0.0	84.6	15.4

<u>Travel Conditions</u>						
	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0

## Phase II Fireplace Emissions Calculations

Emission Rates (taken from 1.10 - Residential Wood Stoves of AP-42)

-- emission rates expressed in terms of lbs/ton

	ROG	Nox	CO	SOx	PM10
<i>Catalytic</i>	26.6	2	107	0.4	16.2
<i>Noncatalytic</i>	28	2.8	140.8	0.4	14.6

<i>Total Number of Residential Units</i>	780
<i>Percentage of Residences with Phase II Fireplaces</i>	26.00%

Assumed split of Catalytic v Noncatalytic Fireplaces Among Residences With Wood Fireplaces

<i>Catalytic</i>	50.00%
<i>Noncatalytic</i>	50.00%
Total	100.00%

<i>Wood Burned*</i>	0.28	cords/yr/fireplace
<i>Wood Usage*</i>	82	days/yr/fireplace
<i>Pounds in a Cord of Wood*</i>	2458	lbs

### Emissions

	ROG	Nox	CO	SOx	PM10
lbs/day	23.23414	2.042562	105.4473	0.340427	13.10644
tons/yr	0.9526	0.083745	4.323338	0.013958	0.537364

\* default fireplace usage assumptions from URBEMIS 2007

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: P:\Projects - All Employees\+10000\7145 BRSP\Staff Folders\Chris M\Final EIR\Operational AQ\Plan Area 1 only\Plan Area 1 Operational.urb924

Project Name: BRSP - Operational

Project Location: Placer County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	3.05	0.49	0.82	0.00	0.00	0.00	615.55

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	2.20	2.63	23.19	0.03	5.78	1.10	3,282.30

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	5.25	3.12	24.01	0.03	5.78	1.10	3,897.85

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.04	0.48	0.20	0.00	0.00	0.00	613.87
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.65
Landscape	0.10	0.01	0.62	0.00	0.00	0.00	1.03
Consumer Products	2.41						
Architectural Coatings	0.50						
TOTALS (tons/year, unmitigated)	3.05	0.49	0.82	0.00	0.00	0.00	615.55

Area Source Changes to Defaults

- Percentage of residences with wood stoves changed from 35% to 0%
- Percentage of residences with wood fireplaces changed from 10% to 0%
- Percentage of residences with natural gas fireplaces changed from 55% to 55.5%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Single family housing	1.23	1.50	13.25	0.02	3.30	0.63	1,875.60
Condo/townhouse general	0.97	1.13	9.94	0.01	2.48	0.47	1,406.70
TOTALS (tons/year, unmitigated)	2.20	2.63	23.19	0.03	5.78	1.10	3,282.30

Operational Settings:

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Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2017 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

<u>Summary of Land Uses</u>						
Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	40.00	10.25	dwelling units	120.00	1,230.00	10,516.13
Condo/townhouse general	9.38	6.15	dwelling units	150.00	922.50	7,887.10
					2,152.50	18,403.23

<u>Vehicle Fleet Mix</u>				
Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	39.9	0.0	99.7	0.3
Light Truck < 3750 lbs	14.0	0.7	94.3	5.0
Light Truck 3751-5750 lbs	22.4	0.0	100.0	0.0
Med Truck 5751-8500 lbs	11.1	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.7	0.0	77.8	22.2
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	44.4	55.6
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	1.1	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	5.5	43.6	56.4	0.0
School Bus	0.1	0.0	0.0	100.0

<u>Vehicle Fleet Mix</u>				
Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Motor Home	1.3	0.0	84.6	15.4

<u>Travel Conditions</u>						
	Residential			Commute	Commercial	
	Home-Work	Home-Shop	Home-Other		Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: P:\Projects - All Employees\+10000\7145 BRSP\Staff Folders\Chris M\Final EIR\Operational AQ\Plan Area 1 only\Plan Area 1 Operational.urb924

Project Name: BRSP - Operational

Project Location: Placer County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	17.21	2.71	8.02	0.00	0.03	0.02	3,375.07

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	11.91	12.53	123.62	0.18	31.65	6.05	18,795.47

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	29.12	15.24	131.64	0.18	31.68	6.07	22,170.54

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.20	2.63	1.12	0.00	0.01	0.00	3,363.66
Hearth - No Summer Emissions							
Landscape	1.09	0.08	6.90	0.00	0.02	0.02	11.41
Consumer Products	13.21						
Architectural Coatings	2.71						
TOTALS (lbs/day, unmitigated)	17.21	2.71	8.02	0.00	0.03	0.02	3,375.07

Area Source Changes to Defaults

- Percentage of residences with wood stoves changed from 35% to 0%
- Percentage of residences with wood fireplaces changed from 10% to 0%
- Percentage of residences with natural gas fireplaces changed from 55% to 55.5%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Single family housing	6.58	7.16	70.64	0.10	18.09	3.46	10,740.27
Condo/townhouse general	5.33	5.37	52.98	0.08	13.56	2.59	8,055.20
TOTALS (lbs/day, unmitigated)	11.91	12.53	123.62	0.18	31.65	6.05	18,795.47

Operational Settings:

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Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2017 Temperature (F): 85 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses						
Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	40.00	10.25	dwelling units	120.00	1,230.00	10,516.13
Condo/townhouse general	9.38	6.15	dwelling units	150.00	922.50	7,887.10
					2,152.50	18,403.23

Vehicle Fleet Mix				
Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	39.9	0.0	99.7	0.3
Light Truck < 3750 lbs	14.0	0.7	94.3	5.0
Light Truck 3751-5750 lbs	22.4	0.0	100.0	0.0
Med Truck 5751-8500 lbs	11.1	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.7	0.0	77.8	22.2
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	44.4	55.6
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	1.1	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	5.5	43.6	56.4	0.0
School Bus	0.1	0.0	0.0	100.0

<u>Vehicle Fleet Mix</u>				
Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Motor Home	1.3	0.0	84.6	15.4

<u>Travel Conditions</u>						
	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: P:\Projects - All Employees\+10000\7145 BRSP\Staff Folders\Chris M\Final EIR\Operational AQ\Plan Area 1 only\Plan Area 1 Operational.urb924

Project Name: BRSP - Operational

Project Location: Placer County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	16.18	3.64	1.55	0.01	0.09	0.08	4,656.48

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	12.46	18.13	133.86	0.16	31.65	6.05	16,364.60

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	28.64	21.77	135.41	0.17	31.74	6.13	21,021.08

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.20	2.63	1.12	0.00	0.01	0.00	3,363.66
Hearth	0.06	1.01	0.43	0.01	0.08	0.08	1,292.82
Landscaping - No Winter Emissions							
Consumer Products	13.21						
Architectural Coatings	2.71						
TOTALS (lbs/day, unmitigated)	16.18	3.64	1.55	0.01	0.09	0.08	4,656.48

Area Source Changes to Defaults

- Percentage of residences with wood stoves changed from 35% to 0%
- Percentage of residences with wood fireplaces changed from 10% to 0%
- Percentage of residences with natural gas fireplaces changed from 55% to 55.5%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Single family housing	7.12	10.36	76.49	0.09	18.09	3.46	9,351.20
Condo/townhouse general	5.34	7.77	57.37	0.07	13.56	2.59	7,013.40
TOTALS (lbs/day, unmitigated)	12.46	18.13	133.86	0.16	31.65	6.05	16,364.60

Operational Settings:

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Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2017 Temperature (F): 40 Season: Winter

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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					2,152.50	18,403.23

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Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
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Light Truck 3751-5750 lbs	22.4	0.0	100.0	0.0
Med Truck 5751-8500 lbs	11.1	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.7	0.0	77.8	22.2
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	44.4	55.6
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	1.1	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	5.5	43.6	56.4	0.0
School Bus	0.1	0.0	0.0	100.0

<u>Vehicle Fleet Mix</u>				
Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Motor Home	1.3	0.0	84.6	15.4

<u>Travel Conditions</u>						
	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

## Phase II Fireplace Emissions Calculations

Emission Rates (taken from 1.10 - Residential Wood Stoves of AP-42)

-- emission rates expressed in terms of lbs/ton

	ROG	Nox	CO	SOx	PM10
<i>Catalytic</i>	26.6	2	107	0.4	16.2
<i>Noncatalytic</i>	28	2.8	140.8	0.4	14.6

<i>Total Number of Residential Units</i>	270
<i>Percentage of Residences with Phase II Fireplaces</i>	44.44%

Assumed split of Catalytic v Noncatalytic Fireplaces Among Residences With Wood Fireplaces

<i>Catalytic</i>	50.00%
<i>Noncatalytic</i>	50.00%
Total	100.00%

<i>Wood Burned*</i>	0.28	cords/yr/fireplace
<i>Wood Usage*</i>	82	days/yr/fireplace
<i>Pounds in a Cord of Wood*</i>	2458	lbs

### Emissions

	ROG	Nox	CO	SOx	PM10
lbs/day	13.74664	1.208496	62.38859	0.201416	7.754514
tons/yr	0.563612	0.049548	2.557932	0.008258	0.317935

\* default fireplace usage assumptions from URBEMIS 2007

# Greenhouse Gas Emission Worksheet

## Project Summary

Project: 100007145  
Project Number: BRSP

Project Totals	Tonnage	Percent of total
<b>Construction</b>		
Total	11328 metric tons CO2	100%
<b>Operation</b>		
Vehicular Use	14,180 metric tons CO2e	69%
Electricity	1,850 metric tons CO2e	9%
Natural Gas	3,107 metric tons CO2e	15%
Solid Waste	1,021 metric tons CO2e	5%
Water Use	252 metric tons CO2e	1%
<b>Total</b>	<b>20,410 metric tons CO2e</b>	<b>100%</b>